

## AMENDMENTS TO THE CLAIMS

Claims 1 – 6 (Cancelled).

7. (Currently Amended) A method for safe data transfer between an intrinsically safe sensor and a non-intrinsically safe computer unit, comprising the steps of:

converting analog measured values into digital measurement data in a sensor-module of the sensor;

transferring the digital measurement data to a sensor-module head of the sensor via a galvanically decoupled transfer path, and further to a calibration unit;

saving the measurement data to a portable storage medium which is separable from the calibration unit;

transporting the storage medium in a separated state to the computer unit;

connecting the storage medium via an interface that serves as an Explosion-barrier with the computer unit; and

transferring the measurement data to the computer unit via a standard interface provided at the computer unit.

8. (Currently Amended) A method for safe data transfer between an intrinsically safe sensor and a non-intrinsically safe computer unit, comprising the steps of:

converting analog measured values into digital measurement data in a sensor-module of the sensor;

transferring the digital measurement data to a sensor-module head of the sensor via a galvanically decoupled transfer path, and further to a calibration unit;

transferring the measurement data from the calibration unit to an

interface [[CDI]], which is embodied as an ~~Ex~~ Explosion-barrier; and  
transferring the measurement data from the interface [[CDI]] to the  
computer unit via a standard interface provided at the computer unit.

9. (Previously presented) The method as claimed in claim 7, wherein:  
the standard interface at the computer unit is a USB-interface.

10. (Previously presented) The method as claimed in claim 7, wherein:  
data transfer between the sensor and the calibration unit occurs with a  
proprietary protocol in accordance with the RS485 standard.

11. (Current amended) A method for safe data transfer between an  
intrinsically safe sensor and a non-intrinsically safe computer unit, comprising  
the steps of:

converting analog measured values into digital measurement data in a  
sensor-module of the sensor; and

transferring the digital measurement data to a sensor-module head of  
the sensor via a galvanically decoupled transfer path, and further to a plug-in  
module of the computer unit, with the plug-in module ~~being embodied as an~~  
~~Ex-barrier comprising an~~ Explosion-barrier, providing a galvanic separation,  
which occurs either optically, capacitively or inductively.

12. (Previously presented) The method as claimed in claim 11,  
wherein:

the plug-in module is a PCMCIA plug-in card.

13. (New) A method for safe data transfer between an intrinsically  
safe sensor and a non-intrinsically safe computer unit, comprising the steps of:  
converting analog measured values into digital measurement data in a  
sensor-module of the sensor; and

transferring the digital measurement data to a sensor-module head of the sensor via a galvanically decoupled transfer path, and further to a plug-in module of the computer unit, wherein the plug-in module provides a galvanic separation which occurs either optically, capacitively or inductively.